

## Records

**From:** Matthew F. Damos  
**Sent:** Tuesday, August 31, 2004 12:13 PM  
**To:** Records  
**Subject:** Urgency Change Petition

42-4.1&6.1-9 SWRCB Order Approving Temporary  
Urgency Change in Permits 12947A, 12949, 12950  
& 16596 (WR Order 2004-0035-EXEC)

**Matthew Damos, P.E.**  
Water Agency Engineer

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-----Original Message-----

**From:** Matthew F. Damos  
**Sent:** Friday, August 27, 2004 9:43 AM  
**To:** ' (sherrera@waterrights.swrcb.ca.gov)'  
**Cc:** Mike Floyd ([mfloyd@waterrights.swrcb.ca.gov](mailto:mfloyd@waterrights.swrcb.ca.gov)); Pam Jeane; Chris Murray  
**Subject:** Water Conservation Report Outline

Steve,

Please see the attached outline for the water conservation workshop in the fall. I would like to arrange a teleconference between you and SCWA early next week to discuss the date for the work shop and answer any questions you might have.

**Matthew Damos, P.E.**  
Water Agency Engineer

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8/31/2004

# **Water Conservation Report**

## **State Water Resources Control Board**

### **I. Sonoma County Water Agency Facilities and Service Area**

#### **A. Overview of SCWA Supply System**

#### **B. Water Conservation in SCWA Service Area**

- **Water Conservation Plan**
- **Best Management Practices (BMP) Programs**
- **Out Reach Programs**
- **Water Conservation Estimates**

#### **C. Future Water Conservation in SCWA Service Area**

- **Water Conservation During August 1, 2004 to ...**
- **Water Conservation Goals and Estimates**
- **Future Studies and Programs**

### **II. Other Areas Served by Lake Mendocino**

#### **A. Water Conservation Sonoma County**

#### **B. Water Conservation Mendocino County**

**Records**

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**From:** Matthew F. Damos**Sent:** Wednesday, September 01, 2004 6:54 AM**To:** Steven Herrera**Cc:** 'LERICKSON@waterrights.swrcb.ca.gov'; Pam Jeane; Chris Murray; Tim Anderson; Elizabeth Marie Emmett; Records**Subject:** Urgency Change Petition-(Order 2004-0035-EXEC)**42-4.1&6.1-9 SWRCB Order Approving Temporary Urgency Change in Permits 12947A, 12949, 12950 & 16596 (WR Order 2004-0035-EXEC)**

Steve,

This email is to document our phone conversation on August 31, 2004. On August 27, 2004 Sonoma County Water Agency (SCWA) submitted by email to State Water Resources Control Board (SWRCB) Staff, for review and approval, the outline for the fall water conservation report required per Section 12, Order 2004-0035-EXEC. As per our phone conversation, SWRCB Staff has received and reviewed the outline (see attachment). Staff has determined that the scope and content of the proposed report will satisfy the requirements of the State Board. November 19, 2004 was discussed as a possible date for the State Board Workshop and presentation. You indicated Staff will contact SCWA with confirmation of the actual date at a later time.

If you or your staff have any questions or need additional information, please do not hesitate to contact me.

**Matthew Damos, P.E.**  
Water Agency Engineer

**SONOMA COUNTY WATER AGENCY**

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9/2/2004

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WC/42-4.1-6.1 9 SWRB Order Approving  
Temporary Agency Change/Permits 1294  
12949, 12950, 12956 Order 2004-02  
FILE:WC/42-6.1-9 AGENCY APPLICATIONS  
FILE:WC/42-4.1-9 AGENCY PERMITS &  
LICENSES-CORRESPONDENCE

**Victoria A. Whitney, Chief, Division of Water Rights  
State Water Recourses Control Board  
1001 I Street, 14<sup>th</sup> Floor  
Sacramento, CA 95814**

Dear Mrs. Whitney:

Included with this letter are the ten hard copies and one electronic copy of the Water Conservation Status Report as requested in your November 1, 2004, letter. The conservation report and scheduled Board workshop are required by Section 12 of WR Order 2004-0035-EXEC. Sonoma County Water Agency will present an overview of the report on November 18, 2004, at the Board workshop.

**Any questions or comments should be directed to Pam Jeane, Deputy Chief Engineer at (707) 521-1864.**

Sincerely,

*Randy D. Poole* for  
Randy D. Poole, P.E.  
General Manager/Chief Engineer

Enc

**c Jill Golis – County Counsel  
Pam Jeane, Chris Murray – Sonoma County Water Agency  
Alan Lilly – Bartkiewicz, Kronick & Shanahan, 1011 22nd Street, #100, Sacramento, CA 95816**

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# **Status Report**

## **Water Conservation**

**Prepared For:  
California State Water Resources Control Board**

**Prepared By:  
Sonoma County Water Agency**

**November 2004**

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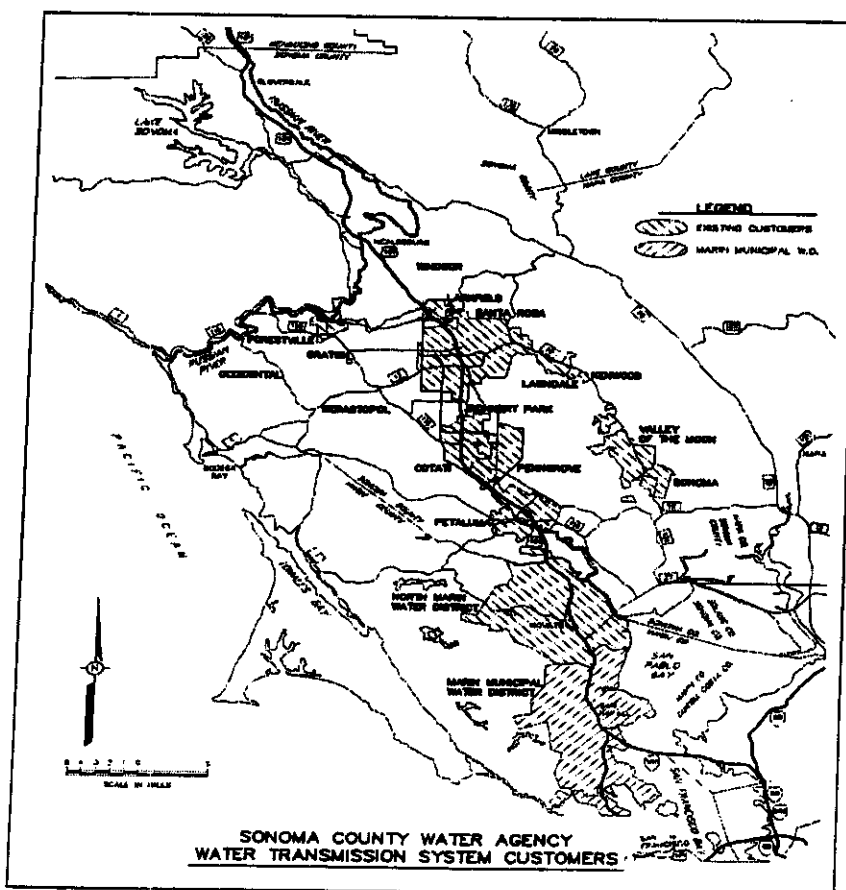
## SECTION 1

### **Water Conservation Measures Implemented in Sonoma County Water Agency Service Area Served by Lake Mendocino**

#### **1.1 BACKGROUND**

This is a water conservation status report for the water supply wholesaler, the Sonoma County Water Agency (Water Agency). The Water Agency's service area is located north of San Francisco Bay. Figure 1-1 is a general location map of the service areas of the Water Agency's transmission system customers.

**Figure 1-1: Water Agency Water Transmission System Customers**



### Russian River System

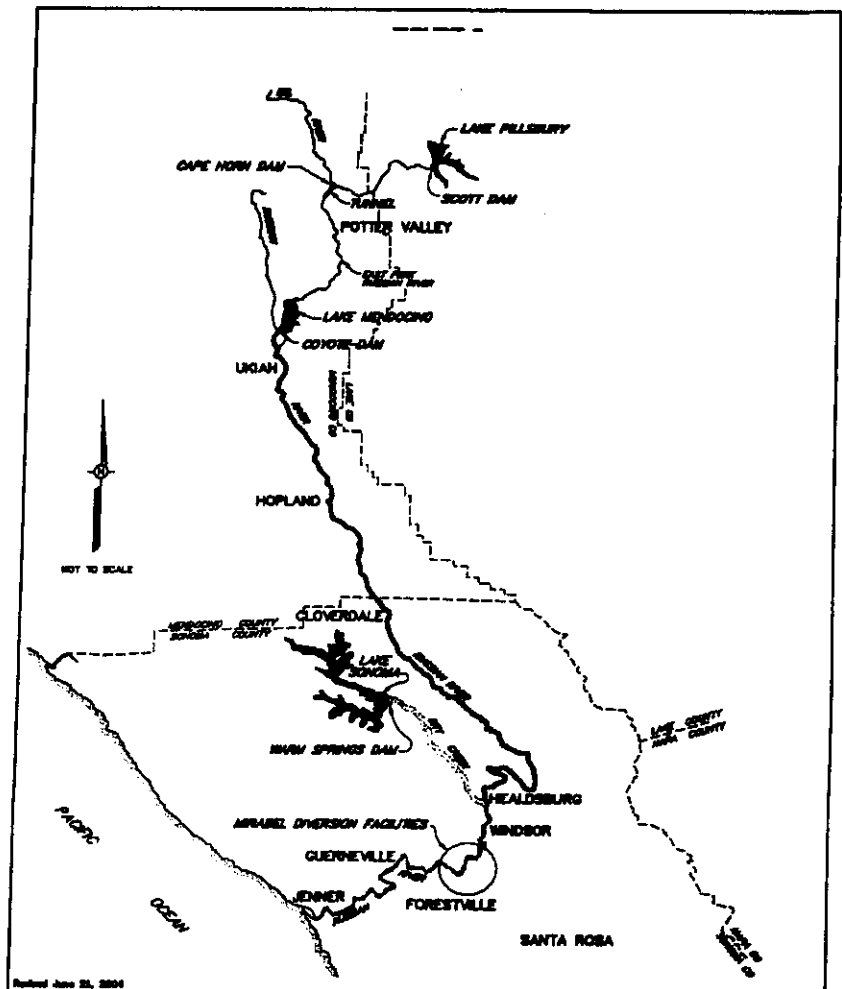
The Russian River originates in central Mendocino County, approximately 15 miles north of Ukiah (see Figure 1-2). It drains an area of 1,485 square miles including much of Sonoma and Mendocino counties, and empties into the Pacific Ocean at Jenner in Sonoma County, about 20 miles west of Santa Rosa. The main channel of the Russian River is about 110 miles long, and the river flows generally southward from its headwaters near Potter Valley to Mirabel Park, where the direction of flow changes to generally westward as the river crosses the Coast Range. Principal tributaries of the Russian River are the East Fork Russian River, Big Sulphur Creek, Mark West Creek, Maacama Creek, Dry Creek, and Austin Creek.

Three major reservoirs provide most of the summer water supply for the Russian River watershed: PG&E's Lake Pillsbury on the Eel River, Lake Mendocino on the East Fork Russian River, and Lake Sonoma on Dry Creek. These three projects are described below. Most of the stream flow in the upper Russian River during the summer months is provided by water released from Lake Mendocino. Much of this supply originates in the Eel River watershed and is diverted to the Russian River via Potter Valley Project (PVP) tunnel.

**Figure 1-2: The Russian River System**

### Lake Pillsbury and PVP

In 1908, W. W. Van Arsdale and the Eel River Power & Irrigation Company (later the Snow Mountain Power Company) completed construction of Cape Horn Dam and Van Arsdale Reservoir on the Eel River in Mendocino County, along with a diversion tunnel that leads from the Eel River, through the mountains, to the East Fork Russian River (see Figure 1-2). The 450-foot drop in elevation between the Eel River and the East Fork Russian River is used to generate electrical energy at PG&E's Potter Valley Power Plant, located approximately 25



miles northeast of the City of Ukiah.

In 1921, Scott Dam was constructed on the headwaters of the Eel River, forming Lake Pillsbury. Scott Dam is a concrete gravity dam that captures runoff from a drainage area of 298 square miles. Lake Pillsbury began storing water in December 1921 and had an original gross storage capacity of 94,400 acre-feet. Sedimentation in the intervening period has reduced the lake's gross storage capacity to 81,160 acre-feet. Lake Pillsbury has a surface area of 2,280 acres at the normal maximum pool elevation of 1,828 feet above mean sea level (MSL). Water is released from Lake Pillsbury to the Eel River and then re-diverted 12 miles downstream at Cape Horn Dam to the Potter Valley Power Plant through the diversion tunnel. The water then flows through the East Fork Russian River to Lake Mendocino.

All of these facilities comprise the PVP. The PVP was purchased by the Pacific Gas and Electric Company (PG&E) in September 1929, and PG&E has owned and operated the PVP since then.

Since 1908, diversions from the Eel River have augmented summer flows in the Russian River. The quantity of water that can be diverted to PG&E's Potter Valley Power Plant is affected by the PVP releases required to maintain the fishery in the Eel River. The release schedule is included in the FERC license for the PVP. PG&E also has an agreement with the United States Forest Service to maintain high reservoir levels in Lake Pillsbury until Labor Day of each year for recreational use. From 1922 to 1992, diversions to the Russian River watershed averaged 159,000 acre-feet per year (AFY). Over the past ten years, PVP tunnel flows have averaged about 31,500 acre-feet over the period from June 1 through September 30.

### **Lake Mendocino**

Lake Mendocino, located 3 miles east of the City of Ukiah, is created by Coyote Valley Dam, located on the East Fork Russian River, 0.8 mile upstream of the East Fork's confluence with the Russian River (see Figure 1-2). Coyote Valley Dam is a rolled earth embankment dam with a crest elevation of 784 feet above MSL, which is 160 feet above the original streambed.

Lake Mendocino, which began storing water in 1959, has a design capacity of 122,500 acre-feet at the spillway crest elevation of 764.8 feet above MSL and captures runoff from a drainage area of about 105 square miles. The design water supply pool of Lake Mendocino is 72,000 acre-feet. The Water Agency and the Mendocino County Russian River Flood Control and Water Conservation Improvement District (Mendocino District) have water right permits authorizing the storage of up to 122,500 AFY in the reservoir. Because the Water Agency is the local sponsor of the Coyote Valley Dam Project, it has the exclusive right to control releases from the water supply pool in Lake Mendocino. When the water level rises above the top of the water supply pool (elevation 737.5 feet above MSL) and into the flood control pool, the U.S. Army Corps of Engineers (USACE) assumes

control of releases. Lake Mendocino has recreational facilities that are heavily used and provide significant economic benefits to the local area.

During the rainy season (November through May), natural streamflow (rather than reservoir releases) accounts for most of the flow of the Russian River. From June through October, most of the water in the Russian River downstream of Coyote Valley Dam and above Dry Creek is water that is released from the PVP and water released from storage in Lake Mendocino.

### **Lake Sonoma**

Lake Sonoma, located about 5 miles southwest of the City of Cloverdale, is created by Warm Springs Dam, located on Dry Creek, about 11 miles upstream of Dry Creek's confluence with the Russian River (see Figure 1-2). Warm Springs Dam is a rolled earth embankment dam.

Lake Sonoma, which began storing water in 1983, has a design capacity of 381,000 acre-feet at the spillway crest elevation of 495 feet above MSL, and captures runoff from a drainage area of about 130 square miles. The design water supply pool of Lake Sonoma is 245,000 acre-feet. The Water Agency has a water right permit authorizing the storage of up to 245,000 AFY in the reservoir. Because the Water Agency is the local sponsor of the Warm Springs Dam Project, it has the exclusive right to control releases from the water supply pool in Lake Sonoma. When the water level rises above the top of the water supply pool (elevation 451.1 feet above MSL) and into the flood control pool, the USACE assumes control of releases.

The USACE operates Warm Springs Dam for flood control purposes in accordance with the criteria outlined in the Warm Springs Dam and Lake Sonoma, Dry Creek, California Water Control Manual (USACE 1984). Objectives described in this document include: (1) providing the maximum reduction in peak-flood discharges on Dry Creek and the Russian River below Healdsburg, (2) providing the maximum practical amount of conservation storage without impairment to other project functions, and (3) maintaining a minimum pool elevation of 292 feet above MSL to ensure operation of the fish hatchery. The 130,000 AF of flood control storage in Lake Sonoma was designed to provide control of a flood the size of the December 1955 flood event, which had a peak discharge of approximately 26,000 cfs at the dam site and approximately represents a 20-year flood event.

During the dry season (May through October), natural streamflow, rather than reservoir releases, accounts for very little of the flow in Dry Creek. Most of the water present in Dry Creek during this period results from the Water Agency's water supply releases from Lake Sonoma. Water supply releases from Lake Sonoma are used to meet minimum instream flow requirements and municipal, domestic, and industrial demands in the lower Russian River area and portions of Sonoma and Marin counties (USACE 1998b). To meet these demands, water released from Lake Sonoma combines with

releases from Lake Mendocino and runoff from other tributaries. Inflow to Lake Sonoma approaches zero from July through September, and the reservoir normally reaches its lowest level in November.

### **Water Rights**

The Water Agency holds water right Permit 12947A for storage of water in Lake Mendocino and for direct diversion and redirection of water at the Water Agency's Wohler/Mirabel diversion facilities. Under this permit, the combined direct diversion and redirection rates at Wohler/Mirabel are limited to 92 cfs (average monthly rate) and 37,544 AFY. The Water Agency holds water right Permit 16596 for storage of water at Lake Sonoma and for direct diversion and redirection of 180 cubic feet per second (cfs) from the Russian River at Wohler/Mirabel. The Water Agency also holds water right Permits 12949 and 12950 for direct diversions of 20 cfs and 60 cfs, respectively, at Wohler/Mirabel. The combined direct diversion and redirection rates at Wohler/Mirabel under all four of the Water Agency's water right permits presently are limited to no more than 180 cfs (116.3 million gallons per day [MGD]) and 75,000 AF during October 1 to September 30 of each year.

The Mendocino District holds water right permit 12947B for storage of water at Lake Mendocino and for direct diversion and redirection of water at various points along the Russian River. Under this permit, the combined direct diversion and redirection quantities are limited to 8,000 AFY.

### **State Water Resources Control Board Decision 1610 (Decision 1610)**

The Water Agency controls and coordinates water supply releases from the Coyote Valley Dam and Warm Springs Dam projects in accordance with the provisions of Decision 1610, adopted on April 17, 1986. Decision 1610 specifies the minimum flow requirements for Dry Creek and the Russian River. These requirements vary based on defined hydrologic year conditions.

Decision 1610 requires a minimum flow of 25 cfs in the East Fork Russian River from Coyote Valley Dam to the confluence with the Russian River during all water year conditions. From that junction to Dry Creek, the required minimum Russian River flow requirements are 185 cfs from April through August and 150 cfs from September through March during Normal conditions, 75 cfs during Dry hydrologic conditions, and 25 cfs during Critically Dry hydrologic conditions. Decision 1610 further specifies two variations of the Normal hydrologic condition, commonly known as Dry Spring 1 and Dry Spring 2. The occurrence of these conditions results in lower minimum flow requirements in the upper Russian River during times when the combined storage in Lake Pillsbury and Lake Mendocino is unusually low. Under Dry Spring 1, the minimum flow requirement for the upper Russian River between the confluence of the East and West Forks and Healdsburg is 150 cfs from June through March, with a reduction to 75 cfs during October through December, if Lake Mendocino storage is less than 30,000 AF. Under Dry Spring 2, the upper Russian River minimum flow requirement is 75 cfs from June through December and 150 cfs from January through March.

From Dry Creek to the Pacific Ocean, the required minimum flow is 125 cfs during Normal conditions, 85 cfs during Dry hydrologic conditions, and 35 cfs during Critically Dry conditions.

In Dry Creek, the required minimum flows are 75 cfs from January through April, 80 cfs from May through October, and 105 cfs in November and December during Normal conditions. During Dry and Critically Dry conditions, these requirements are 25 cfs from April through October, and 75 cfs from November through March.

### **Water Conservation**

The Water Agency is a member of the California Urban Water Conservation Council (CUWCC) with ten retail water agencies in the Agency's service area who, as signatories to the CUWCC Memorandum of Understanding (MOU), have pledged their good faith effort towards implementing best management practices (BMPs) identified in the CUWCC MOU Regarding Urban Water Conservation. See Attachment A for CUWCC and other memberships. The two primary purposes of the MOU are as follows:

- a. to expedite implementation of reasonable water conservation measures in urban areas, and
- b. to establish assumptions for use in calculating estimates of reliable future water conservation savings resulting from proven and reasonable conservation measures. Estimates of reliable savings are the water conservation savings that can be achieved with a high degree of confidence in a given service area.

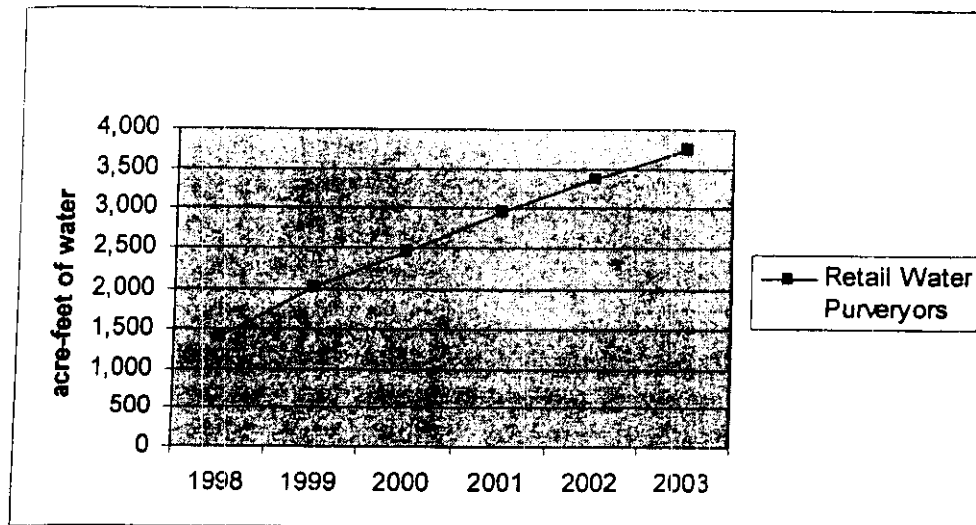
The Water Agency signed the CUWCC MOU on June 1, 1998. Table 1-1 provides a list of each Agency retail purveyor and the date the MOU was signed in the period between 1991 and 2002.

<b>Table 1-1</b>	
<b>List of Retail Purveyors and Signatory Year of CUWCC MOU</b>	
<b>Name (abbreviation)</b>	<b>Year Signed CUWCC MOU</b>
Marin Municipal Water District (MMWD)	8/29/1991
City of Santa Rosa (Santa Rosa)	5/5/1998
Town of Windsor (Windsor)	8/9/1999
Forestville Water District (Forestville)	5/1/2001
North Marin Water District (NMWD)	7/5/2001
City of Cotati (Cotati)	7/11/2001
Valley of the Moon Water District (VOM)	10/1/2001
City of Sonoma (Sonoma)	1/18/2002
City of Petaluma (Petaluma)	1/31/2002
City of Rohnert Park (Rohnert Park)	6/12/2002

## 1.2 WATER CONSERVATION RESULTS

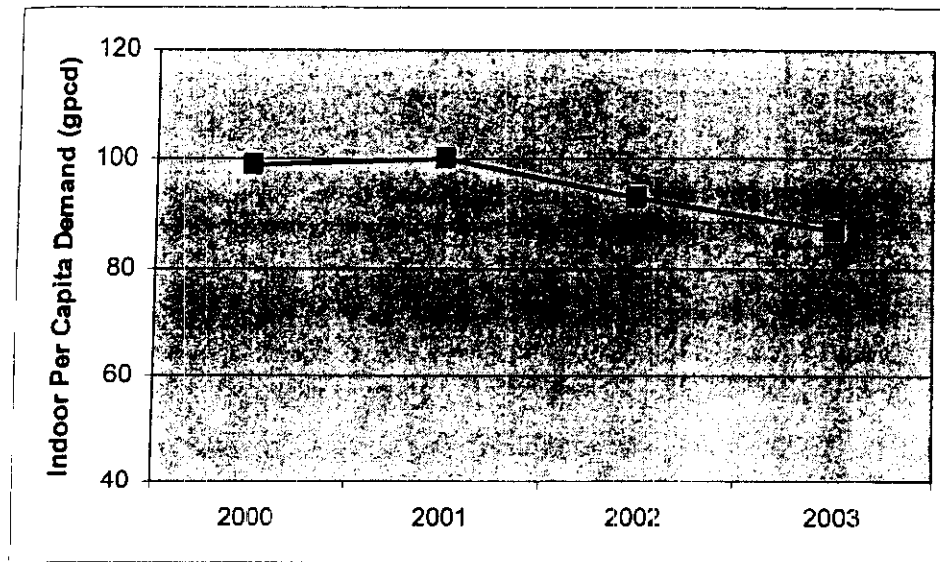
The estimated water conservation savings for all of the retail water purveyors in the Agency's service area is 3,755 acre-feet per year. The estimated savings in Figure 1-3 are based on fiscal year 2002/2003 CUWCC BMP reporting. These results do not include water savings from landscape irrigation measures or the commercial sprayer valve program that were aggressively implemented in 2003/2004.

Figure 1-3: Estimated Annual Water Conservation Savings



According to West Yost & Associates Consulting Engineers' Technical Memorandum titled "Methodology for Implementation of Shortage Provisions in the Eleventh Amended Agreement for Water Supply and Related Agreements," dated September 23, 2004, the weighted average wintertime per capita water use by all retail water agencies is 95 gallons per capita per day (gpcd). This average winter per capita water usage is averaged by population and derived from total wintertime water sales and reflects inside water use for residential and non-residential needs. The per capita demand went from 99 gpcd in 2000 to 87 gpcd in 2003 as indicated in Figure 1-4.

**Figure 1-4: GPCD for Agency's Retail Purveyors in Winter (January and February)**



### 1.3 SUMMARY OF WATER CONSERVING FIXTURE REPLACEMENTS

Retail water purveyors' BMPs address replacement of high water use fixtures and appliances with water conserving devices and other matters. Table 1-2 shows fixture replacements completed by the Water Agency's retail water agencies.

<b>Table 1-2</b> <b>Water Conserving Fixture Replacements</b>	
<b>Fixture</b>	<b>Total Replacements</b>
Residential ULF Toilets	110,350
Water Efficient Washing Machines	15,655
Commercial ULF Toilets	12,031
Commercial Restaurant Pre-rinse Valve	545

### 1.4 WATER CONSERVATION PROGRAM IMPLEMENTATION

The Water Agency and its ten retail water purveyors implement wholesale and retail water conservation programs as defined by the CUWCC MOU. The Water Agency was the first wholesaler in the state to have all its retail water agencies sign the CUWCC MOU and commit to implement CUWCC BMPs. Table 1-3 lists CUWCC's 14 water conservation BMPs being implemented locally and/or regionally.



<p align="center"><b>Table 1-3</b> <b>Urban Water Conservation Council BMPs</b></p>		
<b>BMP</b>	<b>Retail Water Purveyor</b>	<b>Water Agency</b>
BMP 1: Water Survey Programs for Single-Family and Multi-Family Residential Customers	✓	
BMP 2: Residential Plumbing Retrofit	✓	
BMP 3: System Water Audits, Leak Detection, and Repair	✓	✓
BMP 4: Metering with Commodity Rates for all New Connections and Retrofit of Existing	✓	
BMP 5: Large Landscape Conservation Programs and Incentives	✓	b
BMP 6: High-Efficiency Washing Machine Rebate Programs	✓	b
BMP 7: Public Education Programs	✓	✓
BMP 8: School Education Programs	✓	✓ b
BMP 9: Conservation Programs for CII Accounts	✓	b
BMP 10: Wholesale Agency Assistance Programs		✓
BMP 11: Conservation Pricing	✓	✓
BMP 12: Conservation Coordinator	✓	✓
BMP 13: Water Waste Prohibition	✓	
BMP 14: Residential ULFT Replacement Programs	✓	a

<sup>a</sup> Valley of the Moon Water District and City of Sonoma by Sonoma Valley County Sanitation District.

<sup>b</sup> These programs are being run in part by Water Agency

## 1.5 WHOLESALE WATER CONSERVATION PROGRAM

The Water Agency collaborates at a policy level with its retail water purveyors through the Water Advisory Committee (WAC). The WAC includes city and district managers, council and board members and senior level staff.

In addition to its work with the WAC, Water Agency staff collaborates at a program implementation level through the North Coast Water Conservation (NCWC) group. The NCWC group includes conservation coordinators and specialists and is an information clearing house for current issues, regional program coordination and events.

Water Agency water conservation staff assists four of the retail water purveyors in implementing conservation practices and programs specific to their service area. These programs are based on the CUWCC BMPs.

In addition to the locally operated programs, the Water Agency operates water conservation programs on a regional basis when cost-effective including preparation of regional Urban Water Management Plans, Geographic Information System (GIS) technology implementation to assist retail water agency customers with irrigation management, residential washing machine rebates, installation of restaurant pre-rinse valves, commercial and institutional water conservation implementation with assistance from the Sonoma County Economic Development Board, school and public education, training seminars, and media outreach.

#### **1.6 REGIONAL URBAN WATER MANAGEMENT PLAN (UWMP)**

The regional UWMP is a water supply planning document required every five years by the California State Water Code for water agencies that are larger than 3,000 connections or deliver more than 3,000 acre-feet of water per year. Water Agency staff is currently preparing the regional UWMP 2005.

The Water Agency has prepared regional UWMPs at the request of the retail water purveyors since 1985. The regional UWMP describes the availability of water and discusses water supply and demand comparisons, reliability planning, water shortage contingency planning, wastewater treatment and recycling, and water conservation activities.

The Water Agency coordinates the development of the regional UWMP with staff from each of the retail water purveyors, as well as providers of wastewater treatment including the Santa Rosa Sub-regional Wastewater System, Petaluma Wastewater Treatment Facility, Novato Sanitary District, Sonoma Valley County Sanitation District, and Forestville Water District Sewer Services Zone.

In the process of updating the regional UWMP 2000, more than two dozen workshops were held with community and public interest organizations, such as neighborhood associations, service groups, business leaders, local environmental groups, the landscape industry, and agricultural growers' associations. Prior to the Water Agency's Board of Directors adopting the regional UWMP 2000, the plan was made available for each retail water purveyor's public hearing prior to approval and adoption.

#### **1.7 REGIONAL WASHING MACHINE REBATE PROGRAM**

The Water Agency coordinates a regional residential clothes washing machine rebate program for the prime retail water agencies. The Water Agency contracts with Electric Gas Industries Association (EGIA) to facilitate the point-of-purchase advertising, rebate printing and processing, and rebate payments to customers. Customers are rebated between \$75 and \$150 per ENERGY STAR® rated washer and applications are available at the appliance store where the machines are purchased.

Since 1998, over 15,655 ENERGY STAR® rated washing machines have been rebated within the Water Agency's service area. With estimated savings of 5,100 gallons per washer per year, the 15,655 washers conserve approximately 80 million gallons of water annually.

## **1.8 REGIONAL INSTALLATION OF RESTAURANT PRE-RINSE VALVES**

The Water Agency is coordinating the regional restaurant pre-rinse valve program. The Water Agency operates this program by agreement with the CUWCC. The program is co-funded by the California Public Utilities Commission (CPUC), through funds collected by the Public Goods Charge and participating water agencies throughout California. The PUC funds \$131.19 per installed valve, and each participating retail water agency funds \$50.00 per installed valve.

CUWCC has contracted with the implementation vendor, Honeywell DMC Services, Inc., to perform the marketing, outreach, project procurement, and installation of the spray valves as well as database administration and customer service. Overall program management, technical support, and measurement and verification will be handled by the CUWCC.

To date, 545 water- and energy-efficient restaurant pre-rinse valves (1.6 gallons per minute) were installed in food service establishments at no cost to the business or property owner.

The average water and wastewater savings achieved by replacing a pre-rinse valve in a restaurant is 1.1 acre-feet over the 5-year lifetime of the valve. The average water and wastewater savings achieved is 100 to 300 gallons per day, depending on the size of the restaurant and the hours of operation. The estimated water savings from installing the 545 restaurant pre-rinse nozzles is 95.23 AF per year.

## **1.9 REGIONAL WATER EDUCATION PROGRAM**

The Water Agency operates a K – 8th grade in-class program, outdoor education programs, teacher training, and community education with water conservation as a primary emphasis. Table 1-4 lists program statistics since 1999. The Agency's education staff includes 2-full time permanent teachers, one temporary teacher, interns and volunteers.

<b>Table 1-4</b>	
<b>Regional Water Education Program</b>	
<b>Contacts</b>	<b>Activity</b>
141,782	Customers received material, information, or other education programs from Water Agency
86,550	Customers were reached through direct community outreach
13,829	Students received direct instruction from Water Agency staff
1,223	Classes requested and received educational materials reaching 37,501 students
1,810	Adults participated with the classroom instruction
303	Classes participated in outdoor educational program
293	Classes participated in classroom instructional program

In addition, staff conducts an annual Water Conservation Calendar Contest and provides an annual Water Education Catalog of materials and services to all schools and teachers within the Water Agency's service area.

The Water Agency's curriculum and materials follow California state frameworks and meet all California science standards for schools.

The Water Agency's two full-time permanent teachers (Water Program Specialists) were recognized with the following awards:

**2002 Informal Science Educators of the Year**  
Cary Olin and Daniel Kahane  
California Science Teachers Association

**2004 Informal Science Educator of the Year**  
Daniel Kahane  
National Science Teachers Association

#### **1.10 RETAIL WATER AGENCIES CONSERVATION PROGRAM**

Retail water purveyors served by water from Sonoma County Water Agency implement water conservation programs applicable to retail water purveyors. As noted before, 10 of the retail water purveyors are signatory to the CUWCC Memorandum of Understanding and are committed to implement the BMPs for water conservation. Many of the retail water purveyors implement programs that go beyond the CUWCC BMPs such as;

- Cash for Grass Program where customers are paid to remove turf grass and install water efficient landscapes,
- Requirements that new water connections install high efficient washing machines, limits on the amount of turf and efficient irrigation requirements, and
- Incentives for new laundry and restaurant facilities to install water efficient equipment.

Progress in implementation of the BMPs at the retail level is indicated in Figure 1-6. Since several retail purveyors are newer signatories to the CUWCC, these purveyors fall within a grace period where programs are in a start-up phase and may not meet full BMP compliance targets. The 14 BMPs are listed in Table 1-3.

The Water Agency periodically reviews performance of the retail water purveyors with regard to implementation of the CUWCC BMP programs. The most recent analysis indicated excellent performance on most of the BMPs but also indicated a need for additional work on BMP 1,

BMP 1 – Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers; and

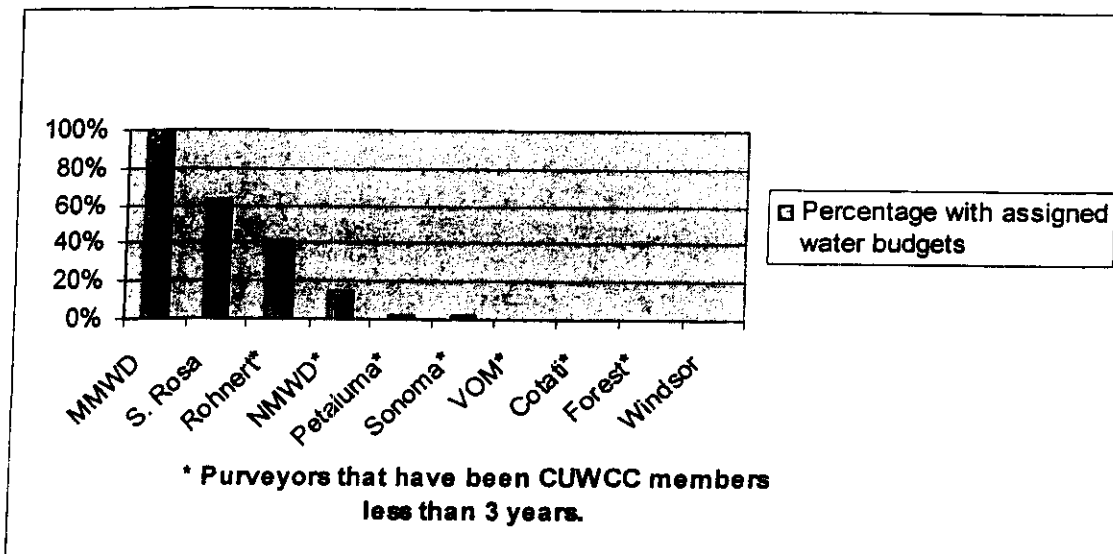
BMP 5 – Large Landscape Conservation Programs and Incentives

One of the main statewide challenges is compliance with BMP 5, mainly because of the tremendous amount of staff time required to obtain specific data, develop water budgets, and provide notices each billing cycle to accounts that have exceeded their water budget. A water budget is the calculated amount of water that a given landscape area needs to stay green and healthy. Water budgets are calculated using square foot measurements for turf and non-turf and information from local weather stations.

Under BMP #5, retail water purveyors are required to assign water budgets to 90% of their dedicated irrigation meter accounts within 3 years of signing the CUWCC MOU. Seven of the Water Agency's retail water purveyors have been CUWCC MOU signatories for less than 3 years. These Agency retail water purveyors are currently measuring turf and non-turf areas so that they can calculate water budgets. Six retail water purveyors are assigning water budgets to some or all of their dedicated irrigation meter customers. Figure 1-5 shows the percentage dedicated water meter accounts that have been assigned water budgets for each retail water purveyor.

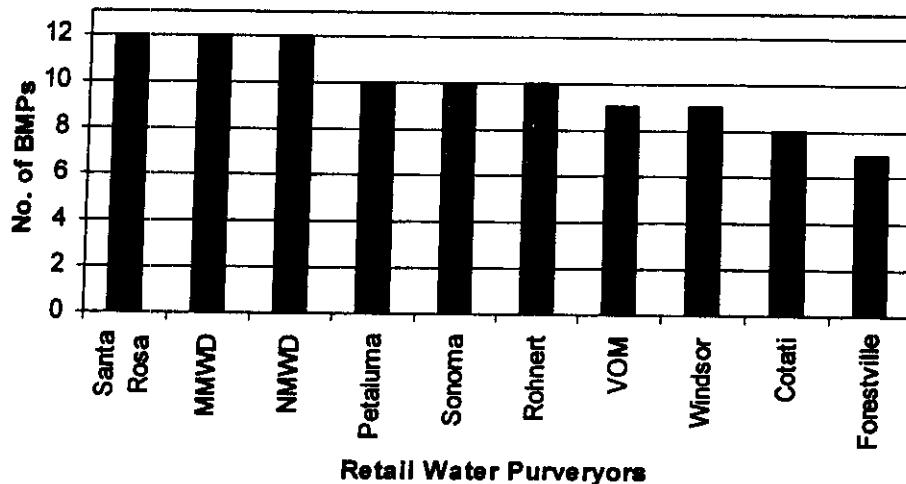
The Water Agency is creating a Water Budget Report template that can be used by each retail water purveyor. The Water Budget Report will help the purveyors comply with the water budget portion of BMP 5. Site specific data will be used to calculate water budgets and be used as a report to notify customers. Water purveyors will then determine landscape accounts that are over irrigating to target customers needing water management assistance.

**Figure 1-5: Assigning Water Budgets**



There are 8 purveyors implementing BMP 1 and BMP 5 programs during fiscal year 2004/2005. The Water Agency anticipates the number of retail water purveyors in compliance with these BMPs to dramatically increase in the next reporting period.

**Figure 1-6: Number of BMPs Being Implemented**



#### **1.11 AWARDS AND RECOGNITION**

Water Agency conservation staff and water conservation programs continue to be recognized by independent organizations including:

**California Public Officials for Water and Environmental Reform (POWER)**

2002 POWER Award

Collaborative planning effort that promotes a regional vision and includes multiple benefits.

**Association of California Water Agencies**

2002 Theodore Roosevelt Award

North Marin Water District Conservation Program

**United States Environmental Protection Agency Region 9**

2001 Environmental Achievement Award

Industrial Water Conservation Program in Petaluma

**California Urban Water Conservation Council**

2001 Wholesale Agency Award

Regional water conservation program

**California Senator Barbara Boxer**

2001 Certificate of Achievement

Industrial water conservation in Petaluma

### 1.12 SELF-SUSTAINING FUNDING MECHANISM

The Water Agency's water conservation and water reuse programs are financially self-sustainable. Annually, over a ten-year period, the Water Agency and its retail water agencies agreed to co-fund local and regional water conservation programs with a \$2 million budget beginning in 1998. Funded through wholesale water rates and individual agreements, \$1.5 million annually goes directly to the retail water purveyors to share in the cost of BMP water conservation program implementation. The remaining \$0.5 million funds the Water Agency's regional water conservation program.

The funding amounts available to each retail water purveyor are detailed in Table 1-5. The total available funding is based on each retail water agency's percentage of water entitlement under the 11<sup>th</sup> Amended Agreement for Water Supply. The retail water purveyor determines the water conservation measures to implement in its service area, and individual funding agreements to support these programs are prepared and implemented by the Water Agency.

<b>Table 1-5</b>			
<b>Retail Water Purveyor Water Conservation Funding</b>			
<b>Agency</b>	<b>Water Entitlements AF/yr</b>	<b>Water Entitlement</b>	<b>Total Available Funding 1998-2008</b>
Santa Rosa	29,100	40%	\$6,037,344
NMWD	14,100	20%	\$2,925,311
Petaluma	13,400	19%	\$2,780,083
Rohnert Park	7,500	10%	\$1,556,017
VOM	3,200	4%	\$ 663,900
Sonoma	3,000	4%	\$ 622,407
Cotati	1,520	2%	\$ 315,353
Forestville	480	1%	\$ 99,585
<b>Total</b>	<b>72,300</b>	<b>100%</b>	<b>\$15,000,000</b>

### 1.13 EXPANDED WATER CONSERVATION PROGRAMS

To solve summer and other peak-period water transmission capacity problems, the Water Agency and retail water purveyors collaborated on and formalized a Memorandum of Understanding Regarding Water Transmission System Capacity Allocation during Temporary Impairment (Temporary Impairment MOU). The Temporary Impairment MOU initiated a program to help the Agency's retail water purveyors to implement additional water conservation measures, develop recycled water projects that offset potable water use, and develop standby local peak-month production capacity that reduces demand on the Water Agency's water transmission system. The program is called the Local Supply/Recycled Water/Tier 2 Water Conservation Funding Program

(LRT2 Program). The Water Agency and its retail water purveyors agreed to co-fund an additional \$13 million over a 10-year period beginning in fiscal year 2001/2002 to share in the cost of LRT2 Program implementation.

#### **1.14 RETAIL PURVEYORS' RECYCLED WATER PROJECTS**

**City of Rohnert Park** is the largest urban recycled water user in Sonoma County, using recycled water for irrigation of parks, school grounds, and various commercial and industrial sites. Current recycled water use averages over 1,000 acre feet per year for 34 landscaped sites. The City is currently moving towards expanding their recycled water program to include additional schools, parks, and other private and public properties to receive recycled water. The City has adopted a Mandatory Use Ordinance for Recycled Water to assure that this supply option is fully utilized where appropriate.

**City of Petaluma** is constructing a pipeline to convey recycled water to Rooster Run Golf Course. Upon completion of the project, the pipeline will save 110 million gallons of potable water annually. The project will reduce impact on the Water Agency's water transmission system by delivering high-quality recycled water for irrigating the turf and landscape plants at the Rooster Run Golf Course and reducing peak demands on the Water Agency's water transmission system.

**North Marin Water District (NMWD)** and **Novato Sanitary District (NSD)** have environmental review and detailed design of a recycled water facility that will provide 0.5 mgd of recycled water for landscape irrigation at the Stone Tree Golf Course in Novato. The recycled water facilities will treat secondary effluent to meet Title 22 requirements for unrestricted use. The recycled water treatment process includes coagulation, conventional filtration and disinfection using sodium hypochlorite.

The initial project, estimated to cost \$3.1 million, will serve recycled water for irrigation to the Stone Tree Golf Course delivering up to 260 acre feet per year through a recycled water pipeline. The golf course irrigation is currently served through a temporary potable water connection. The recycled water facilities may be expanded in the future to provide additional recycled water pursuant to a Recycled Water Master Plan completed by NMWD and NSD in September 2003.

**Forestville Water District** - The Water Agency provided funding to the Forestville Water District's recycled water project in the Forestville area to offset existing potable water from the Water Agency's transmission system used to irrigate a youth park and two local schools.

**City of Santa Rosa** is the managing partner of the Reclamation System, which reclaims, treats, and distributes recycled water for more than 225,000 residents in the cities of Cotati, Rohnert Park, Santa Rosa, Sebastopol, the South Park Sanitation District, and portions of the unincorporated area of Sonoma County. Before the Geysers Recharge Project was implemented, the Subregional Reclamation System relied primarily on one of the largest recycled water agricultural irrigation



systems in the world—sending more than 50 percent of its tertiary-treated water to irrigate approximately 6,400 acres of farmlands, vineyards, and public and private urban landscaping.

Design and construction of the Geysers Recharge Project—which is a cooperative effort between the City, the State Lands Commission, and Calpine Corporation—began in June 1998. The final section of pipeline was installed in July 2003 and the system was thoroughly tested before becoming fully operational in October of that year.

The Geysers steam field in Sonoma County was first drilled in the 1920s, and soon became the world's largest geothermal steam field. It reached its peak production in 1987 when it produced enough electricity to serve the daily needs of 1.8 million people. Since then, the steam field began a gradual state of decline as its underground water source slowly depleted. Still, The Geysers, now primarily operated by Calpine Corporation, continued to produce enough energy for 1.1 million people. The best engineering estimates indicated that, with the introduction of additional water, the steam field could continue to be a productive energy source well in excess of 20 years. This notion gave birth to the Geysers Recharge Project and the capability to transport (on average) 11 million gallons per day of tertiary-treated recycled water to the Geysers steam field to generate electricity.

The \$187 million Geysers Recharge Project involved constructing a 41-mile underground pipeline. The 48 inch pipe begins at Santa Rosa's Laguna Treatment Plant and continues to the base of the Mayacamas Mountains, allowing for potential reuse options along the way. The pipeline diameter reduces to 30-inches for the climb up to Calpine steam fields.

**Town of Windsor** makes recycled water available to local agricultural and recreational lands, as well as, residential landscape irrigation. Windsor is constructing the Sonoma County Airport Recycled Water Project, a multi-phased project consisting of installation of up to 35,000 feet of recycled water mains and 50 or more water services in the non-residential area known as the Sonoma County Airport Industrial Area. Upon completion of all phases of the project, 100 to 120 million gallons of water are expected to be saved annually from the Water Agency's Santa Rosa Aqueduct.

**Marin Municipal Water District (MMWD)** distributes approximately 850 AF/year of recycled water to 321 services for irrigation, toilet flushing, trap priming, cooling towers, car washes and a laundry facility. The Marin County Jail has been using reclaimed water for 10 years. In San Rafael, some single family homes have indoor dual plumbing and use recycled water to irrigate their front and back yards. MMWD works in cooperation with Las Gallinas Valley Sanitary District.

## **Section 2**

### **Additional Water Savings Measures During the Term of this Temporary Urgency Change**

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#### **2.1 BACKGROUND**

During the term of this Temporary Urgency Change, the Agency and its retail purveyors continued to implement the CUWCC BMPs for water conservation, water conservation measures that go beyond the CUWCC BMPs, installed new infrastructure and deliver recycled water to reduce the amount potable water demand. In addition the Agency initiated Water Wisely Campaign and requested the retail water purveyors reduce summertime water demand, voluntarily implement the Stage 1 water conservation measures, implement additional water conservation measures, recycled water project and increase the use of their local ground water supplies immediately.

June 14, 2004: Water Agency staff prepared a letter to water transmission system customers, mayors, city managers, and city councils. The letter stated it is likely that demands on the transmission system during the summer of 2004 would substantially exceed the reliable capacity of the transmission system. The Water Agency requested that all retail water purveyors implement water conservation measures, recycled water projects and/or increase the use of their local groundwater supplies immediately to reduce their demand on the Water Agency's transmission system throughout this summer. A copy of the letter is included as Attachment B.

June 14, 2004: Press release titled "Water Agency Warns of Summer Water Shortages" appeared in The Press Democrat newspaper. A copy of the press release is included as Attachment C.

December 7, 1999: Water Agency's Board of Directors (Board) passed Resolution No. 99-1564. In the Resolution, the Board requested the retail water purveyors, other Water Agency customers, and Marin Municipal Water District to:

- a. voluntarily implement the Stage 1 water conservation measures (15% overall reduction), between June 1 and September 30 each summer, identified in their respective Water Shortage Contingency Plans which are an element of the 2000 Urban Water Management Plan, and
- b. provide additional facilities to reduce demands on the Agency's transmission system, such as local water supply and storage.

2000 – 2005: Temporary Impairment MOU allocates reduced water supply amounts available to each retail water purveyor during the summer months. The Water Agency developed and implemented a focused public outreach campaign addressing peak-use reduction needs with the assistance of the retail water purveyors. The following actions were taken to support the peak-use reduction program.

## 2.2 WATER WISELY CAMPAIGN

The Water Wisely Campaign is the Water Agency's annual outdoor water conservation, multi-media campaign. The six-week campaign includes paid print and broadcast advertising, direct mail in the form of water retailer bill stuffers, point of purchase information, and a booth at the Sonoma County Fair. The goal of the campaign is to engage citizens in the need for water conservation and offer resources to help them reduce their outdoor water use. New to the campaign for 2004 was the "Water Wisely Makeover," where one homeowner was randomly chosen from Sonoma County Fair attendees to receive a new, low-water use front yard, provided by the Water Agency, Friedman's Home Improvement, and the California Landscape Contractors Association. Table 2-1 shows the "Water Wisely Campaign" components.

Table 2-1 Water Wisely Campaign Components	
Activity Level	Components
337	Comcast cable spots
90	Radio spots
12	The Press Democrat Newspaper
2,500	Canvas bags with outdoor water conservation message (Sonoma County Fair)
80,000	Bill insert for July/August residential and commercial water bills
4 months	Water conservation message displayed on Hwy.101 billboard

The Water Agency staffed a public education/water conservation exhibit at the Sonoma County Fair from July 27, 2004, to August 9, 2004.

## **Section 3**

### **Future Water Conservation and Estimated Savings**

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#### **3.1 FUTURE WATER CONSERVATION SAVINGS GOAL**

Through successful negotiation and cooperation with the Water Agency, the retail water purveyors agreed in 1999 to collectively achieve a combined water savings goal of 6,600 acre-feet of water per year by the year 2015. The Water Agency, and its retail water purveyors, agreed to achieve the 6,600 acre-feet annual water savings by reducing the contractual water entitlements to reflect these savings. A Water Conservation Plan (WCP) developed by the Water Agency is used as a guide to achieve this water savings goal.

The WCP is implemented under terms of agreements between the Water Agency and each retail water purveyor. The WCP provides retail water purveyor with a funding mechanism and guidelines for implementing the water conservation provisions of the Eleventh Amended Agreement for Water Supply. The guidelines are tailored to meet the needs of each retail water purveyor's service area.

Conservation is an integral part of both the Water Agency's and the retail water purveyors' long-term resource planning. The WCP proposes to implement any cost-effective measures and/or any other measures that would help to achieve the water savings. Both the Water Agency and retail water purveyors seek to actively encourage effective use and preservation of local water resources through the WCP.

#### **3.2 WATER CONSERVATION RESULTS**

The CUWCC calculates estimated water conservation savings based strictly on formal reports filed by the Agency's retail purveyors. The estimated conservation savings amount for fiscal year 2002/2003 was 3,755 acre-feet per year for the retail water purveyors. These results do not include water savings from natural occurring fixture replacement that is encouraged by public information programs and by state and federal laws requiring water-efficient fixture installation, from landscape irrigation measures, or from the restaurant pre-rinse valve program implemented in 2003/2004.

#### **3.3 FUTURE DEMAND ANALYSIS UPDATE**

The Water Agency is currently preparing the 2005 regional Urban Water Management Plan. Additionally, the Water Agency is preparing for each retail water purveyor and Water Agency customer a water demand analysis updated from the 1995 Montgomery Watson Water and Wastewater Savings Study.

The updated water demand analysis will reflect adopted and current general plan population projections changes in water use and/or demand hardening patterns, savings from water

conservation measures, and recycled water use savings that have occurred since the Water Agency's WCP went into effect. We anticipate that the water demand analysis will be completed by May 2005.

### **3.4 RECYCLED WATER PROJECTS**

In addition to the local and regional recycled water project described in Section 1.14, the Water Agency is currently working with various entities to investigate the feasibility of projects that use recycled water for beneficial purposes. Recycled water presents a viable and beneficial option to offset existing use of potable water supplied by groundwater resources and the Water Agency's transmission system. Ongoing recycled water efforts of the Water Agency and its retail water purveyors are discussed below.

#### **North Sonoma County Agricultural Reuse Project (NSCARP)**

The Water Agency, in its continuing efforts to develop a recycled water supply for agricultural water users in the Russian River, Alexander, and Dry Creek valley areas (North Sonoma County area) has identified up to 25,000 acres of agricultural lands that could potentially use recycled water. Based on this estimate, staff is developing the NSCARP. The NSCARP would include storage reservoirs, conveyance and distribution pipelines, and pump stations in the North Sonoma County area. The water for NSCARP would be tertiary-treated municipal wastewater conveyed primarily through the City of Santa Rosa's Geysers Pipeline. Two local agricultural groups have expressed significant interest in participating in a recycled water project to develop alternative sources of water for existing agricultural use.

Presently, agricultural water users divert water directly from the Russian River and its tributaries, from the underflow of the Russian River and its tributaries, and from groundwater wells. The Water Agency expects that concerns of federal and state regulatory agencies regarding potential impacts to fishery resources within the Russian River watershed may result in more limitations on diversions of water within the watershed in the future.

The purpose of the NSCARP is to provide a reliable alternative source of agricultural water to reduce reliance on natural regional water supplies and address regional water supply and regulatory issues.

#### **Sonoma Valley Recycled Water Project**

To promote the use of recycled water, the Sonoma Valley County Sanitation District (SVCSD), in conjunction with the Valley of the Moon Water District (VOMWD) and the City of Sonoma, is studying the feasibility of alternatives to store and supply recycled water to potential users within the Sonoma Valley. The objectives of the study are to: (1) evaluate the feasibility (technical and economic) of expanded use of recycled water in Sonoma Valley; (2) evaluate potential water supply, environmental, and economic benefits for stakeholders (VOMWD, City of Sonoma, SVCSD,

agricultural interests); and (3) complete a long-term planning document designed to identify or develop a phased program.

The VOMWD and City of Sonoma rely on both the Russian River watershed and local groundwater for potable water use. There are several constraints on water supply in the Sonoma Valley. These include: (1) constraints in the capacity of the Sonoma Aqueduct, which limit the Water Agency's ability to meet peak summer demand of the VOMWD and the City of Sonoma; (2) increased groundwater use (either for potable water supply or agricultural purposes) is apparently creating stressed aquifer conditions in some areas of the Sonoma Valley; and (3) increased environmental regulatory requirements and constraints are increasing operational costs for the SVCSD and lead to concerns about increased limits on discharge into San Pablo Bay tributaries in the future.

To address these issues, the VOMWD, the City of Sonoma, and the Water Agency have identified the potential use of recycled water as an option to offset water use demands in the Sonoma Valley. The increased use of recycled water within the Sonoma Valley can assist in: (1) offsetting potable water use in the VOMWD and the City of Sonoma; (2) potentially decreasing agricultural groundwater use, thus allowing more groundwater resources to be used for domestic supply; and (3) potentially reducing discharges from the SVCSD treatment plant to waters of the United States.

#### **Others' Recycled Water Use**

In addition to the two projects listed above, the Water Agency has an extensive recycled water program throughout its service area. For example, the Water Agency operates the recycled water programs at both its Airport Treatment Plant and the SVCSD facility. At both facilities, recycled water is used by local agricultural operations to offset existing groundwater and surface water use.

The Water Agency continues to seek additional opportunities to maximize the potential to offset existing water use through the beneficial use of recycled water.

## **Section 4**

### **Other Areas Served by Lake Mendocino**

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#### **4.1 BACKGROUND**

At the direction of the California State Water Resources Control Board, the Agency performed a survey of conservation practices implemented by the larger retail water providers and agricultural water users within one half mile of the mainstem of the Russian River. The survey was conducted throughout the basin served by Lake Mendocino. The survey was carried out by a combination of written correspondence and phone calls asking for voluntary conservation for 2004 and requesting data on current conservation practices. Form letters were sent to twenty-six retail water purveyors and ninety-six large agriculture diverters (see Appendices D for example letters). The responses from the individual diverters were minimal. The data presented in this section is provided by the water retailers that do not directly purchase water from the Water Agency or divert water under the Water Agency's water rights.

#### **4.2 REDWOOD VALLEY COUNTY WATER DISTRICT**

The Redwood Valley County Water District is a retail provider of domestic and agricultural water. The district is currently under a building moratorium. Therefore, no new water hookups are being provided. Agricultural users are conserving through changes from overhead sprinklers to drip systems. Municipal water conservation measures for the district include leak detection and repair, metered water sales, conservation pricing, and periodic letters requesting voluntary water conservation.

#### **4.3 WILLOW AND CALPELLA WATER DISTRICTS**

The service areas for Willow and Calpella have implemented water conservation measures including leak detection and repair, metered water sales, and monthly letters requesting voluntary water conservation. The monthly letters provide informational tips on how to conserve water.

#### **4.4 MENDOCINO COUNTY RUSSIAN RIVER FLOOD CONTROL AND WATER CONSERVATION IMPROVEMENT DISTRICT**

Water Agency staff contacted the district, but no data on conservation measures was available. The district provides a majority of its water to agricultural users, which have predominately made the change from overhead sprinklers to drip systems.

#### **4.5 CITY OF UKIAH**

The City of Ukiah implements a formal water conservation program. The program includes leak detection and repair, metered water sales, and tiered rates, and alternate-day watering cycles for golf courses and city parks. Ukiah has a public education and outreach program that includes direct

phone calls to heavy users such as schools, cemeteries, fairgrounds, and commercial properties; a toll-free water conservation number that provides quick facts; a community watch aspect for wasteful watering techniques; radio and newspaper ads; and special newspaper stories by the City Manager and Public Utilities Director.

It is estimated these programs (including the golf course curtailments) save approximately 500,000 gallons per day.

#### **4.6 HOPLAND PUBLIC UTILITIES DISTRICT (PUD)**

The Hopland PUD has implemented water conservation measures including leak detection and repair, infrastructure replacement, metered water sales, and monthly letters requesting voluntary water conservation. The district is in the planning phase for recycled water use.

#### **4.7 GEYSERVILLE WATER WORKS**

The Geyserville Water Works has implemented water conservation measures including leak detection and repair, metered water sales, encouraging native plant landscaping, and monthly letters requesting voluntary water conservation during dry times.

#### **4.8 CITY OF CLOVERDALE**

The City of Cloverdale has implemented water conservation measures including leak detection and repair, metered water sales, tiered rates, recycled water development, a public outreach and educational program, and monthly letters requesting voluntary water conservation.

#### **4.9 NORTH SONOMA COUNTY AGRICULTURE**

The following provides information regarding historic and current irrigation practices associated with lands that are within the Alexander and Russian River Valleys in Sonoma County. The information was provided to the Agency by representatives from the agricultural community.

##### **Historic Practices:**

Older generation vineyards, planted in the 1970s, in the Alexander and Russian River Valleys were irrigated using overhead sprinklers. At that time, irrigation by overhead sprinklers was typically done in two applications per season, at post bloom and again in late summer. The applied water rate ranged from 0.74 to 0.88 acre-feet per acre, assuming an average irrigation time of 80-96 hours per season.

Since the 1980s, vineyards in Sonoma County have been converted from overhead sprinklers to drip irrigation systems. Drip irrigation conserves water and improves production by targeting irrigation to the root zone of each vine, maximizing efficiency of fertilizer uptake, and minimizing weeds. Drip irrigation has also resulted in improved fruit quality. Use of overhead sprinklers is now limited to frost



protection in the spring and to start cover crops in the fall, helping reduce erosion from the first heavy rains.

#### **Current Practices:**

During July 2004 interviews were conducted with several vineyard managers representing approximately 1,600 acres of vineyard lands within the Alexander and Russian River valleys. These growers make use of various tools to determine the correct amount of water their vines need throughout the season. Visual monitoring is supplemented with real time data from online area weather stations such as from the California Irrigation Management Information System (CIMIS). Soil moisture and plant water stress monitors are used to show actual water tension in the water channels in the plant. The average normal seasonal irrigation demand based on the information provided by these growers ranged from 0.41 to 0.82 acre-feet per acre for vineyards that employ drip irrigation methods with an average irrigation season of 15 weeks.

#### **Future Opportunities for Areas served by Lake Mendocino:**

Sonoma County growers continue to seek additional ways to further conserve water, such as the use of recycled water. Growers within Sonoma County have been working with various cities for over 20 years making use of recycled water. This trend continues to grow with potential for it to be greatly expanded in the future. The main providers of recycled water are the cities of Santa Rosa, Rohnert Park, Petaluma, and Sonoma, and the Town of Windsor. One project in particular, the Northern Sonoma County Agricultural Reuse Project, is currently being studied for the use of recycled water within the Alexander, Dry Creek, and Russian River valleys. The proposed plan involves diversion of recycled water from the newly built Geysers pipeline for storage in several reservoirs to make recycled water available to supplement summer irrigation. Once in place, the project would help to conserve naturally occurring water within the Russian River watershed.

#### **4.10 CITY OF HEALDSBURG**

The City of Healdsburg implements a number of water conservation measures, including leak detection and repair, metered water sales, and conservation pricing. Healdsburg has also taken steps to reduce water demands from some of its largest customers, including golf courses, over the last decade. Annual water use has remained relatively flat between 1990 and 2000, despite a population increase of 13%, and currently is slightly below its maximum annual water use, which occurred in 1992. Healdsburg will consider implementing additional water conservation measures as it updates its Urban Water Management Plan in 2005, and will quantify additional water savings at that time. Among the measures that are likely to be implemented is irrigation of the city's Tayman Park Golf Course and several athletic fields at city schools with recycled water, which has the potential to offset approximately 100 acre-feet of annual potable water use. Healdsburg's Russian River diversions,

which have ranged from 1,120 to 1,547 acre-feet over the last 5 years, will total approximately 1,075 acre-feet for 2004.

#### **4.11 RUSSIAN RIVER COUNTY WATER DISTRICT**

The Russian River County Water District has implemented water conservation measures including leak detection and repair, metered water sales, low-flow toilet installation, low-flow shower head and faucet adapters, and public outreach through conservation literature.

#### **4.12 SWEETWATER SPRINGS WATER DISTRICT**

The Sweetwater Springs Water District has implemented water conservation measures including leak detection and repair, infrastructure replacement, metered water sales, tiered rates, and monthly letters requesting voluntary water conservation.

## **Attachment A**

### **Water Conservation and Education Affiliations**

California Landscape Contractors Association, North Coast Chapter  
Ali Davidson, Member 1988 – 2004

California Science Teachers Association  
Cary Olin & Dan Kahane Members, 1998 – 2004

California Urban Water Conservation Council (CUWCC)  
Councilmember Lynn Hulme, Urban Water Supplier, Term 2000 – 2004

CUWCC Subcommittee Members:  
Landscape, 1995 – 2004  
Residential, 2000 – 2004  
Research & Evaluation, 2001 – 2004

Department of Water Resources Water Education Program  
Cary Olin & Dan Kahane Members, 1985 – 2004

National Science & Educators Association  
Dan Kahane, Member 2003 – 2004

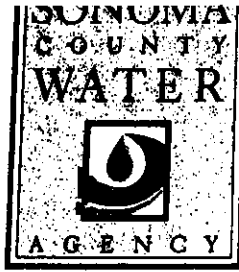
North Bay Watershed Association, 2001 – 2004

Russian River Watershed Association, 2001 – 2004

WaterReuse Association, 2004

## **Attachment B**

### **Letter to Water Transmission System Customers, Mayors, City Managers, and City Councils**



June 14, 2004

TO: Water Transmission System Customers; Mayors; City Managers; City Councils

In May 2004, the Sonoma County Water Agency (Agency) delivered an average of approximately 75 million gallons per day (mgd) of water from the Agency's transmission system. This is a significantly higher rate of delivery than in May of the prior year. Currently, the Agency is delivering over 80 mgd. Assuming the same correlation between May and July/August demands as has occurred in the recent past, it is likely that demands on the transmission system this summer will substantially exceed the reliable capacity of the transmission system. This risk will increase dramatically during periods of above-average temperatures.

Given this risk, the Agency needs each of you to implement water conservation measures, recycled water projects and/or increase the use of your local ground water supplies immediately to reduce your demand on the Agency's transmission system throughout this summer. The Agency staff is completing a comprehensive analysis, and will be bringing this matter to the Agency's Board of Directors in the near future. Nevertheless, I ask that you not wait for formal action of the Board before you take steps to lower peak demands on the transmission system.

In December 1999, the Agency's Board of Directors evaluated the reliable production capacity of the Agency's water transmission system and determined that capacity to be limited to a monthly average of 84 million gallons per day. The Board called on its customers to implement water conservation measures and develop their own recycled water and local ground water supplies and storage to reduce the demands on the Agency's system. Also in response to the capacity limitation, the Agency and its largest customers entered into a Memorandum of Understanding (MOU), which allocated the Agency's existing capacity during the summer months. The allocations under the MOU for 2004 and 2005 assumed that Collector No. 6 and its connecting pipeline would be completed. However, these projects will not be completed until next summer at the earliest. Moreover, even when these projects are completed, if current trends continue, demands will exceed the system's capacity. As a result, the Agency's transmission system cannot presently reliably deliver the allocations listed in Table 1 of that MOU.

The MOU requires the Agency's customers to take certain actions to reduce the impact of the impairment to the Agency's transmission system. In particular, customers must use their "best efforts" to achieve and maintain standby local production capacity equal to approximately 40%, if feasible. Such an increase in local supply may also provide a future source to meet your demand for water above the amounts contemplated by the Eleventh Amended Agreement. In addition to the analysis I plan to present to the Board in late June, I also plan a Board workshop for this fall to review generally the capacity of the transmission system and local production capacity efforts. Agency staff will be contacting you for an update on the status of your efforts in this area before the workshop.

Your efforts to conserve water and to develop and use local supplies during the peak summer season are essential. Increased use of conservation, recycled water, and or local ground water supplies will ensure that sufficient water remains available to residents and businesses within your service area throughout

summer months, particularly during periods of above-average temperatures when water demands are high.

Thank you for your attention to this important matter. If you have any questions regarding the foregoing or in any other respect, please feel free to call me.

Sincerely,

  
Randy D. Poole  
General Manager/Chief Engineer

Enc: Press Release

c: Board of Directors  
Mike Chrystal - County Administrators  
Jill Golis, Steve Shupe - County Counsel  
State Department of Health Services, Drinking Water Field Operations, 50 D Street,  
Suite 200, Santa Rosa, CA 95404  
City of Santa Rosa, Board of Public Utilities, 100 Santa Rosa Avenue, Santa Rosa, CA 95404

## **Attachment C**

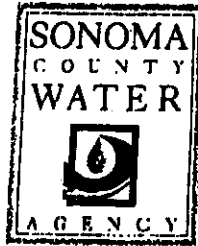
### **Press Release**

## CALIFORNIA URBAN WATER CONSERVATION COUNCIL (CUWCC)

### BEST MANAGEMENT PRACTICES FOR WATER CONSERVATION

BMP 1	WATER SURVEY PROGRAMS FOR SINGLE-FAMILY RESIDENTIAL AND MULTI-FAMILY RESIDENTIAL CUSTOMERS
BMP 2	RESIDENTIAL PLUMBING RETROFIT
BMP 3	SYSTEM WATER AUDITS, LEAK DETECTION AND REPAIR
BMP 4	METERING WITH COMMODITY RATES FOR ALL NEW CONNECTIONS AND RETROFIT OF EXISTING CONNECTIONS
BMP 5	LARGE LANDSCAPE CONSERVATION PROGRAMS AND INCENTIVES
BMP 6	HIGH-EFFICIENCY WASHING MACHINE REBATE PROGRAMS
BMP 7	PUBLIC INFORMATION PROGRAMS
BMP 8	SCHOOL EDUCATION PROGRAMS
BMP 9	CONSERVATION PROGRAMS FOR COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL (CII) ACCOUNTS
BMP 10	WHOLESALE AGENCY ASSISTANCE PROGRAMS
BMP 11	CONSERVATION PRICING
BMP 12	CONSERVATION COORDINATOR
BMP 13	WATER WASTE PROHIBITION
BMP 14	RESIDENTIAL ULFT REPLACEMENT PROGRAMS





CONTACT: Mike Reilly, Chair, Sonoma County Board of Supervisors  
(707) 565-2241  
Pam Jeane, Deputy Chief Engineer, SCWA  
(707) 521-1864

June 14, 2004  
For Immediate Release

### **Water agency warns of summer water shortages**

(Santa Rosa, CA) —Following record water use in April and May, the Sonoma County Water Agency is warning local water retailers, residents and businesses that if the current trend continues, July and August could find them facing shortages and voluntary or mandatory conservation measures.

The water agency delivered an average of 75 million gallons of water each day (mgd) in May, an historic high for that month. The previous high was 68 mgd, set in 2001. In an average May, the water agency would deliver about 55 mgd to its prime contractors, which include the cities of Santa Rosa, Rohnert Park, Petaluma, Cotati and Sonoma, and the Forestville, North Marin and Valley of the Moon water districts. In addition, deliveries for April were 61 mgd, several million gallons a day over the April average of 48 mgd.

"If that trend continues, we are looking at demand peaks in July and August that are simply beyond the capability of our system," said Mike Reilly, chair of the Sonoma County Board of Supervisors, which also acts as the water agency's board of directors. The water agency's

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Water agency

transmission system is capable of supplying 84 mgd on a sustained basis.

The marked increase in water use seems to be the result of several factors.

"Not only did businesses and residents use more water during May, but some of the water retailers opted to take more water agency water from the Russian River and not use their local groundwater supplies," said Pam Jeane, water agency deputy chief engineer.

The cities and water districts have agreements with the water agency which dictate the circumstances under which conservation and other measures would be imposed.

"It's apparent that we need to immediately implement any tools we have at our disposal to reduce the strain on the transmission system," said Supervisor Tim Smith, whose 3<sup>rd</sup> District includes Rohnert Park and most of central Santa Rosa. "This is a systemwide problem and everyone has to work together to solve it."

Many water retailers have taken steps, mostly in the last five years, to reduce water use through conservation programs, water meters and operational changes, such as encouraging the use of recycled water, where appropriate. A program funded by the water agency has enabled the retailers to distribute more than 100,000 low-flow showerheads and aerators; retrofit 33,000 toilets to low-flow; and issue 1,200 rebates for low-water-use washing machines. Another state-funded program has allowed restaurant and food service businesses in the county to replace almost 400 pre-rinse spray nozzles with low-flow versions.

The impending crisis highlights the need for expanded transmission capability in the system of pipes, pumps, tanks and wells that supply water to 570,000 residents of Sonoma and Marin counties. Sonoma County Water Agency has proposed the Water Supply and Transmission System Project, featuring increased water conservation and Russian River usage, as well as an expanded transmission system, to fill the increasing water needs of the county.

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Water agency

"Although we are working on the Water Supply and Transmission System Project, it is at least 10 to 15 years before we will see any additional capacity in the system," said Supervisor Paul Kelley, who represents the 4<sup>th</sup> District. "We all need to be focusing on water conservation and water recycling to maximize the capacity we have now, or we'll be in a serious, prolonged situation."

*Sonoma County Water Agency provides water supply, flood control and sanitation services for the County of Sonoma. Visit us on the Web at [www.sonomacountywater.org](http://www.sonomacountywater.org).*

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**Attachment D**  
**Water Conservation Form Letters**



FILE:WC/42-4.1&6.1-9 SWRCB ORDER APPROVING  
TEMPORARY URGENCY CHANGE IN PERMITS 12947A,  
12949, 12950 AND 16596 (WR ORDER 2004-0035-EXEC)

September 15, 2004

<<First\_Name>> <<Last\_Name>>, <<Title>>  
<<Organization>>  
<<Address>>  
<<City>>, <<State>> <<Zip Code>>

RE: REQUEST FOR SPECIAL EFFORT TO REDUCE WATER USE THROUGH **DECEMBER 2004**

Dear <<Greetings>>:

The Sonoma County Water Agency requests your assistance in conserving water in the Russian River basin during the rest of this year. Always a priority, water conservation is particularly important this year because dry spring conditions led to reduced water storage in Lake Mendocino, leaving the possibility that inadequate supplies will be available during the critically important fall Chinook salmon migration. Any substantive effort you can make to reduce water demand in your agricultural operations could be very beneficial.

Specific actions to consider include:

- Delay, defer or reduce post-harvest irrigation of grapes and pears and other crops. Though we understand this practice may be important to your operation, your diligence in minimizing water use and, if possible, delaying water use until the rains come could benefit the salmon migration.

- Review your farm operations to find opportunities to reduce water use or repair water leaks and implement efficient water management practices identified by the California Department of Water Resources.

Where possible, use stored water supplies and ground water sources located away from the Russian River and its tributaries before drawing on surface water sources.

We would be pleased to hear from you regarding this request and steps you may have already taken to reduce water use. You may contact Matthew Damos at (707) 547-1983, [mdamos@scwa.ca.gov](mailto:mdamos@scwa.ca.gov). If your operation has already achieved a high level of efficiency in water use, we would also like to make note of that fact.

**Why is the Sonoma County Water Agency Contacting You?**

As you may know, the Sonoma County Water Agency controls releases of water from Lake Mendocino and Lake Sonoma to maintain instream riverflows required by the State Water Resources Control Board. This July, the State Water Board issued an urgency order allowing the Water Agency to reduce minimum flows in the Russian River to conserve water in Lake Mendocino so that more water is available for this year's fall salmon migration. The approved reduced flows were set at the level ordinarily used in dry years, most recently in 2001, 1994 and 1991. State and federal fishery agencies had requested that the Water Agency take this action. As a part of its order, the State Board directed the Agency to report back to it on water conservation measures implemented in the region served by water from Lake Mendocino.

This outreach effort together with a report on our extensive urban water conservation programs will be part of our response to the State Board.

The Agency and state and federal fishery resource agencies are very concerned about protecting threatened salmonid species which will be entering the river system in the next few weeks. Preserving water in Lake Mendocino will allow more cool water to be available from the lake for fish migration and spawning. Water conservation will help preserve this water.

**Is More Information Available on Water Conservation?**

Your local agricultural organizations and resource conservation districts are excellent sources for additional information on water conservation methods. Information on agricultural water management planning and efficient water management practices also is available from the California Department of Water Resources (916) 651-9666 or via their website at <http://www.owue.water.ca.gov/agmanage/index.cfm>.

Today, we are asking for your immediate assistance in reducing water demand. However, longer term measures may be available to reduce your water use in future years. Such reductions will reduce the potential of this problem recurring in the future.

Thank you for considering this request. If you have questions or require further information please contact the Agency.

Sincerely,

I am Jeane  
Deputy Chief Engineer

Sonoma County Water Agency Board of Directors  
Sonoma County Farm Bureau  
Mendocino County Farm Bureau  
United Winegrowers  
Sonoma County Grape Growers  
Sotoyome Resource Conservation District  
Goldridge Resource Conservation District  
Mendocino Resource Conservation District



FILE:WC/42-4.1&6.1-9 SWRCB ORDER APPROVING  
TEMPORARY URGENCY CHANGE IN PERMITS 12947A,  
12949, 12950 AND 16596 (WR ORDER 2004-0035-EXEC)

September 10, 2004

<<First\_Name>> <<Last\_Name>>, <<Title>>  
<<Organization>>  
<<Address>>  
<<City>>, <<State>> <<Zip Code>>

**RE: STATE WATER RESOURCES CONTROL BOARD  
TEMPORARY URGENCY ORDER 2004-0035-EXEC**

Dear <<Greetings>>:

Due to dry spring conditions on the Russian River this year, the Sonoma County Water Agency (Agency) sought and obtained State approval for a temporary urgency reduction in minimum flows in the Russian River system for this season. The approved reduced flows were set at the level ordinarily used in dry years, most recently in 2001, 1994 and 1991. The purpose of the reduction was to conserve water in Lake Mendocino so it would be available for the fall Chinook salmon migration.

### **Water Conservation Report**

As a part of the order from the State Water Resources Control Board (State Board) the Agency was directed to prepare a water conservation status report for the Agency service area and for other areas served by Lake Mendocino. The report is to include:

1. Water conservation measures being implemented.
2. Water savings resulting from these measures during the term of the temporary urgency change.
3. Estimated water conservation saving during future years.

The Agency must present the report to the State Board in November of this year.

### **Request for Information**

The Agency is well prepared to address water conservation measures implemented in its service area. However, we need your assistance to properly report on measures implemented in your service area. We are asking you to provide the following items for use in the presentation to the State Board:

Water conservation measures currently implemented by your city or agency  
Water conservation measures planned for future implementation  
Statistics on each conservation measure such as the number of ULFT retrofits; number  
of conservation bill inserts or pamphlets distributed; any use of recycled water for  
irrigation in parks or golf courses; etc.  
Estimated volume of water conserved annually (if available)

- Facts regarding water demand, particularly any reduction in demand this year compared to prior years.
- Efforts to use stored water, recycled water or water sources other than sources related to the Russian River or supported by river flow.

A list of the water conservation best management practices of the California Urban Water Conservation Council (CUWCC) is enclosed to this letter for your reference. Please provide your information to Matthew Damos at the Sonoma County Water Agency at (707) 547-1983, [mdamos@scwa.ca.gov](mailto:mdamos@scwa.ca.gov) by September 30<sup>th</sup> or sooner if possible. Please contact Mr. Damos if you have questions or require more information. Agency staff will be in contact with you to follow-up on this request.

#### **Request for Increased Conservation**

Water storage in Lake Mendocino stood about 11,000 acre-feet below normal levels on June 1 this year. As you may know, the Agency controls releases from both Lake Mendocino and Lake Sonoma and is obligated to maintain state-mandated minimum streamflows in the Russian River. Reduced Lake Mendocino storage limits the Agency's ability to maintain required minimum flows at levels adequate for downstream water users, and also makes it very difficult to assure that there is enough cool water available for migrating Chinook salmon as they enter the river over the next several weeks.

Water conservation is one of the few tools available to help alleviate these problems. We ask that your city or agency take any steps possible to reduce water use over the next few months. Actions may include notifying your customers of the need to conserve water, limiting outdoor irrigation, checking all of your facilities for leaks, and making use of stored water or water sources unrelated to the river to the extent possible. Please let us know what special effort you will be making in response to this request so that we may include that information in our report to the State Water Board.

Thank you for your help in this regard. If we can be of any assistance to you in this matter please call.

Sincerely,

Dam Jeane  
Deputy Chief Engineer

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Sonoma County Water Agency Board of Directors  
Local Elected Officials